UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/185,550 | 11/04/1998 | MINORU SEKIGUCHI | 8261516JDH | 5524 |

21171 7590 03/31/2008

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

| EXAMINER | |
|---|---|
| HAN, QI | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2626 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 03/31/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/185,550 | SEKIGUCHI, MINORU | |
| | Examiner | Art Unit | |
| | Qi Han | 2626 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *16 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3,13,15 and 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,13,15 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Response to Amendment*

2. This communication is responsive to the applicant's amendment dated 01/07/2008. The applicant(s) 1-2, 13, 15 and 17 (see the amendment: pages 2-4).

### *Response to Arguments*

3. Applicant's arguments filed on 01/07/2008 with respect to the claim rejection under 35 USC 103, have been fully considered but are moot in view of the new ground(s) of rejection. Since the amended claims introduce new issue which changes the scope of the claims and the applicant's arguments are based on the newly amended claims (see Remark: page 5, paragraph 5 to page 7, paragraph 2), the response to the arguments is directed to the corresponding claim rejection (see below). It is also noted that the previous cited references are still applicable to the newly amended claims for the prior art rejection under new ground with different teachings and interpretations (see detail below).

***Claim Rejections - 35 USC § 103***

4. Claims 1-3, 13, 15 and 17 are rejected under *35 U.S.C. 103* (a) as being unpatentable over DAVIS et al. (US 5,177,685) hereinafter referenced as DAVIS, in view of HON et al. (US 5,852,801) hereinafter referenced as HON.

As per **claim 1**, DAVIS teaches automobile navigation system using real time spoken driving instructions (title), including using (processing) data from a position sensor (col. 1, line 66), comprising:

"storing data groups in a database" and "word representing a characteristic of a corresponding data group is attached to each of said data group, said data groups being obtained by classifying numerical inputs from said sensor directly of after processing" (col. 2, lines 19-43, 'the map database…includes features that affect speed of travel…', 'positions are…stored in the map database…', 'driving instructions generated …the two issues for spoken directions are what to say and when to say it (data groups)', 'large taxonomy of inter-section types (corresponding to database and including classifying)', 'chooses verbs (words) to indicate (corresponding to attach) the kind (data group) of intersection', 'refer to landmarks and timing …'; col. 11, line 42 to col. 12, line 31, 'position finding system determine position directly by detecting an external signal' and 'position keeping system estimated the current position from knowledge of an earlier position and the change in position', 'measure the amount of turning…distances,…difference in rotation (numerical inputs)', 'position sensor…includes a displacement sensor and a direction sensor' (classifying inputs));

"outputting" "word attached to the corresponding data group among the data groups stored in said database if the corresponding data group is found to be similar to sensor input,

when the sensor input is received", (col. 2, lines 35-67, 'spoken direction', 'instruction', 'speech, especially synthetic speech, as an output media', 'utterances be repeatable on demand', 'construct a new utterance with the same intent, but not necessarily the same words, as a previous message', wherein the speech is necessarily associated with (attached to) the database data groups, such as 'chooses verbs' or 'refer to landmarks'; col. 15, lines 61-64, 'instruction-vp—generate a verb phrase' and 'instruction-np—generate a noun phrase' (read on word attached to the corresponding data groups and are similar to sensor input respectively));

"temporarily storing input data from said sensor as data of a new data group after classifying said input data when it is determined that said input data does not belong to any of said groups classified in said database" and "attaching a word to said data of said new group temporarily stored to store said data of new group in said database" (col. 20, lines 54-67, 'able to model the uncertainty of a position', 'errors …occur if the database is somewhat out date', 'acquires a model of the user automatically…learn the driver's reaction time (necessarily storing it as an input data) by measuring the time', which suggests that at least one input data is classified as reaction time (in a new data group) and is temporarily stored for later use in processing and/or outputting the related spoken instruction; also see col. 20, line 66 to col. 21, line 11, wherein 'the acquisition of speech recognition templates' as 'instruction' may also read on the claimed temporarily storing input data from said sensor).

DAVIS does not explicitly teach the processed and/or attached word being "a (the) natural language word". However, it is noted that DAVIS discloses 'discourse generator (col. 3, line 22) and 'description function to generate a description of the action…takes inputs specifying the size of the description (brief or long), the tense (past, present or future), and the reference

position' (col. 15, lines 26-67), and providing the example sentences for the instructions (col. 16, lines 9-14 and (col. 19, lines 48-50) that are obviously corresponded to natural language words, which suggests that the DAVIS' system has capability of implementing functionality as claimed. Therefore, one having ordinary skill in the art at the time the invention was made would have found it obvious to provide discourse generator with specific instructions associating natural language words, as taught by DAVIS himself, for the purpose of providing specific and/or sufficient direction and increasing the driver's confidence for user using the system (DAVIS: col. 15, lines 40-50).

Further, it is noted that DAVIS does not explicitly teach the attached word "being input by a user" and that "a provisional code is temporally attached to said data of said group stored in the database without a word, in response to temporarily storing the input data, until said input word is provide". However, the features are well known in the art as evidenced by HON who, in the same field of endeavor, discloses 'method and apparatus for automatically invoking a new word module for unrecognized user input' (title), comprising 'the user interface' that 'suggests (in response to temporarily storing the input data) to a user which unrecognized words (temporarily stored data associated with spoken word), may be new words (corresponding to new group)' and 'advises the user to enter (input) words into a new word lexicon (corresponding to database)' (abstract and col. 8, lines 64-67). HON further discloses 'data structure arrangement, of memory 3' including 'the storage of a set or array of Hidden Markov Models 13' and other sets and arrays for the processed vectors (col. 5, lines 10-25 and Figs. 1A-1C); 'data structure for containing (storing) parameters associated with each word in the lexicon (corresponding database)' including handling 'the unigram probability of unrecognized word (a data group in the

database without a word)', 'bi-gram or tri-gram probability language model', 'a top one (provisional code) word and an N-best list is (temporally attached to data)' that is 'ranked (provisional code) by score of each word in the list', wherein the rank(s) and the corresponding candidate word(s) in the list is necessarily or inherently associated with the spoken word (data) classified as 'unrecognized word' (stored in database without a word) so as to interpreted as the claimed "provisional code that is temporally attached to said data", and 'model 101 is provided the relevant information about the unrecognized word' to 'determine if the unrecognized word is in lexicon', so that the unrecognized word can be selected from n-best list or added (type in by user) to lexicon (reads on "until a word is provided") (col. 6, line 56 to col. 8, line 67 and Figs. 3-4). Furthermore, HON discloses 'an exemplary data structure for containing parameters associated with each word in the lexicon' (bridge paragraph: table 1) including data fields: 'Word ID', 'pronunciation' and 'unigram probability', one of ordinary skill in the art would have recognized that the data structure could be used for storing unrecognized word (new group) in the same way as other recognized word except that the data field of 'WordID' is assigned with a special code indicating temporally stored data being in unrecognized word group, and the result of using this data structure would be stable and predicable. Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify DAVIS by providing data structure in memory to storing related information regarding (including provisional code) unrecognized word (data group) associating n-best list with possible words in lexicon (database) or adding to lexicon, and a mechanism for entering (inputting) the corresponding word by user, as taught by HON, for the purpose (motivation) of improving the

recognition accuracy and/or improving the probability of spotting new words (HON: col. 2, lines 20-26).

As per **claim 2**, it recites a sensor data processing apparatus with means-plus functions. The rejection is based on the same reason described for claim 1, because the rejection for claim 1 covers the same or similar limitations or equivalent functionalities as claim 2, wherein, the data received/derived from 'the position sensor' (DAVIS: col. 11, line 42 to col. 12, line 67) corresponds to the claimed "state or state change", and 'instruction-vp—generate a verb phrase' and 'instruction-np—generate a noun phrase' (DAVIS: col. 15, lines 61-64) corresponds to the claimed "dynamic characteristic" and "static characteristic".

As per **claim 3** (depending on claim 2), DAVIS further teaches "status judging means for judging a status using a certain word attached to a group', (col. 14, line 24 to col. 16, lines 67, 'the acts in the working prototypes…(including judging a status)', 'short description', 'long description', 'verb phrases', 'specifying direction with landmark', 'a cue is expressed either as a full sentence …or a proposed reposition phrase').

As per **claim 13**, it recites a computer-readable storage medium. The rejection is based on the same reason described for claim 1, because the rejection for claim 1 covers the same or similar limitations or equivalent functionalities as claim 13, wherein, the data received from 'the position sensor' is read on the claimed "unrelated to language".

As per **claim 15**, it recites a method. The rejection is based on the same reason described for claim 1, because the rejection for claim 1 covers the same or similar limitations or equivalent functionalities as claim 15.

As per **claim 17**, the rejection is based on the same reason described for claim 1, because the rejection for claim 1 covers the same or similar limitations or equivalent functionalities of claim 17, wherein the spoken data corresponding to the unrecognized word and/or new word disclosed by HON reads on the claimed "data of a new group"; and combination of 'bi-gram or tri-gram probability language model' and the n-best list disclosed by HON is broadly read on the claimed "providing a suggestion to a user a type of speech of a word".

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

Mail Stop ____
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**or faxed to:** 571-273-8300, (for formal communications intended for entry)

**Or:** 571-273-8300, (for informal or draft communications, and please label "PROPOSED" or "DRAFT")

If no Mail Stop is indicated below, the line beginning Mail Stop should be omitted from the address.

Effective January 14, 2005, except correspondence for Maintenance Fee payments, Deposit Account Replenishments (see 1.25(c)(4)), and Licensing and Review (see 37 CFR 5.1(c) and 5.2(c)), please address correspondence to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, etc.) as follows:

U.S. Patent and Trademark Office
Customer Window, Mail Stop _____
Randolph Building
Alexandria , VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see http://pair-direct.uspto.gov.

QH/qh
March 25, 2008

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626